

CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

May 22, 1964

RESERVOIR FLUID DIVISION

Texaco Inc.
P. O. Box 810
Farmington, New Mexico

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION

Texaco EXHIBIT NO. C
CASE NO. 3073

Attention: Mr. A. G. Walsh

Subject: Reservoir Fluid Study
Navajo "AL" No. 1 Well
Undesignated (Tocito Dome) Field
San Juan County, New Mexico

Gentlemen:

Samples of separator liquid and vapor were collected from the subject well on May 6, 1964. These samples, together with a sample of stock tank liquid, were shipped to our Dallas laboratory for studies. The results of these studies are presented to you in this report.

The producing gas-liquid ratio measured in the field and after correction for the factors shown on page one of the report was 3290 cubic feet of separator gas at 14.7 psia and 60° F. per barrel of stock tank liquid at 60° F. In the laboratory this ratio was found to be equivalent to 3238 standard cubic feet of separator gas per barrel of separator liquid. The separator products were then physically recombined in this ratio and examined in a visual cell at the reservoir temperature of 159° F. The mixture exhibited a bubble point pressure of 5320 psig. This value is considerably above the reservoir pressure. When viewed at the reservoir pressure of approximately 3200 psig the system was found to be in two phases. Approximately 42 per cent of the system volume was liquid.

These results have been previously transmitted by telephone. The composition of the separator products and the stock tank liquids are presented on the following pages with the calculated composition of the producing

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Texaco Inc.
Navajo "AL" No. 1 Well

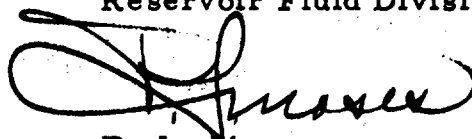
Page Two

well stream at the time the well was tested.

It was a pleasure to perform these tests for you. Should you have any questions, please do not hesitate to contact us.

Very truly yours,

Core Laboratoreis, Inc.
Reservoir Fluid Division

A handwritten signature in black ink, appearing to read "P. L. Moses", written over a horizontal line.

P. L. Moses
Operations Supervisor

PLM:jr

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CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

| | | | |
|---------|-----------------------------------|--------------|--------------------|
| Company | <u>Texaco Inc.</u> | Date Sampled | <u>May 6, 1964</u> |
| Well | <u>Navajo "AL" No. 1</u> | County | <u>San Juan</u> |
| Field | <u>Undesignated (Tocito Dome)</u> | State | <u>New Mexico</u> |

FORMATION CHARACTERISTICS

| | |
|------------------------------------|------------------------------------|
| Formation Name | <u>Pennsylvanian-Barber Creek</u> |
| Date First Well Completed | <u>May 3</u> , 19 <u>64</u> |
| Original Reservoir Pressure | <u>3214</u> PSIG @ <u>6285</u> Ft. |
| Original Produced Gas-Liquid Ratio | <u>2911</u> SCF/Bbl |
| Production Rate | _____ Bbls/Day |
| Separator Pressure and Temperature | _____ PSIG _____ ° F. |
| Liquid Gravity at 60° F. | _____ ° API |
| Datum | _____ Ft. Subsea |

WELL CHARACTERISTICS

| | |
|-------------------------|---------------------------------------|
| Elevation | <u>5763 DF</u> Ft. |
| Total Depth | <u>6910</u> Ft. |
| Producing Interval | <u>6275-6302</u> Ft. |
| Tubing Size and Depth | <u>2 - 3/8</u> In. to <u>6189</u> Ft. |
| Open Flow Potential | _____ MMSCF/Day |
| Last Reservoir Pressure | <u>3206</u> PSIG @ <u>6288</u> Ft. |
| Date | <u>May 6</u> , 19 <u>64</u> |
| Reservoir Temperature | <u>157</u> ° F. @ <u>6150</u> Ft. |
| Status of Well | _____ |
| Pressure Gauge | _____ |

SAMPLING CONDITIONS

| | |
|------------------------------------------------|-----------------------------|
| Flowing Tubing Pressure | <u>1892</u> PSIA |
| Flowing Bottom Hole Pressure | <u>2778 @ 6288 Ft.</u> PSIA |
| Primary Separator Pressure | <u>55</u> PSIG |
| Primary Separator Temperature | <u>43</u> ° F. |
| Secondary Separator Pressure | _____ PSIG |
| Secondary Separator Temperature | _____ ° F. |
| Field Stock Tank Liquid Gravity | _____ ° API @ 60° F. |
| Primary Separator Gas Production Rate | <u>962.1</u> MSCF/Day |
| Pressure Base | <u>14.7</u> PSIA |
| Temperature Base | <u>60</u> ° F. |
| Compressibility Factor (F_{pv}) | <u>1.012</u> |
| Gas Gravity (Laboratory) | <u>0.724</u> |
| Gas Gravity Factor (F_g) | <u>1.1753</u> |
| Stock Tank Liquid Production Rate @ 60° F. | <u>292.5</u> Bbls/Day |
| Primary Separator Gas/ Stock Tank Liquid Ratio | <u>3290</u> SCF/Bbl |
| or | <u>304.0</u> Bbls/MMSCF |

Core Laboratories, Inc., Engineer

REMARKS:

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